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(56) Documents cited  
GB 1293925 A GB 1225359 A GB 0940925 A  
GB 0541229 A GB 0409010 A GB 0202859 A  
EP 0102842 A1 EP 0058953 A1 US 4204346 A

(58) Field of search  
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(54) A shoe or boot

(57) A shoe or boot (10) for ball kicking games includes a flap (19) secured along one edge to the reinforcing adjacent the lace eyelets of the shoe or boot and hingeable to lie across the upper (11) of the shoe or boot (10). The flap is securable at its other end by means of cooperating parts (21, 22) and has marked on its upper surface a distinctive patch (23) which marks the correct point for striking of a ball during a kicking game.

The advantage of the invention is that a player may use the patch (23) to "feel" when he has correctly struck the ball.

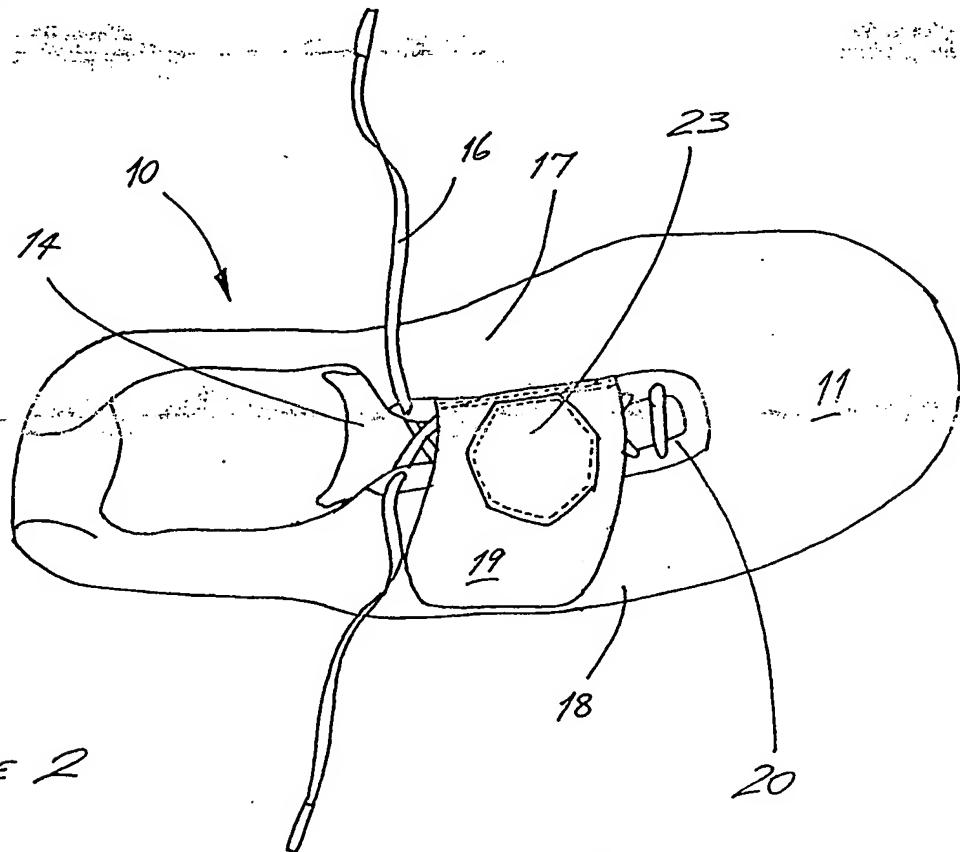


FIGURE 2

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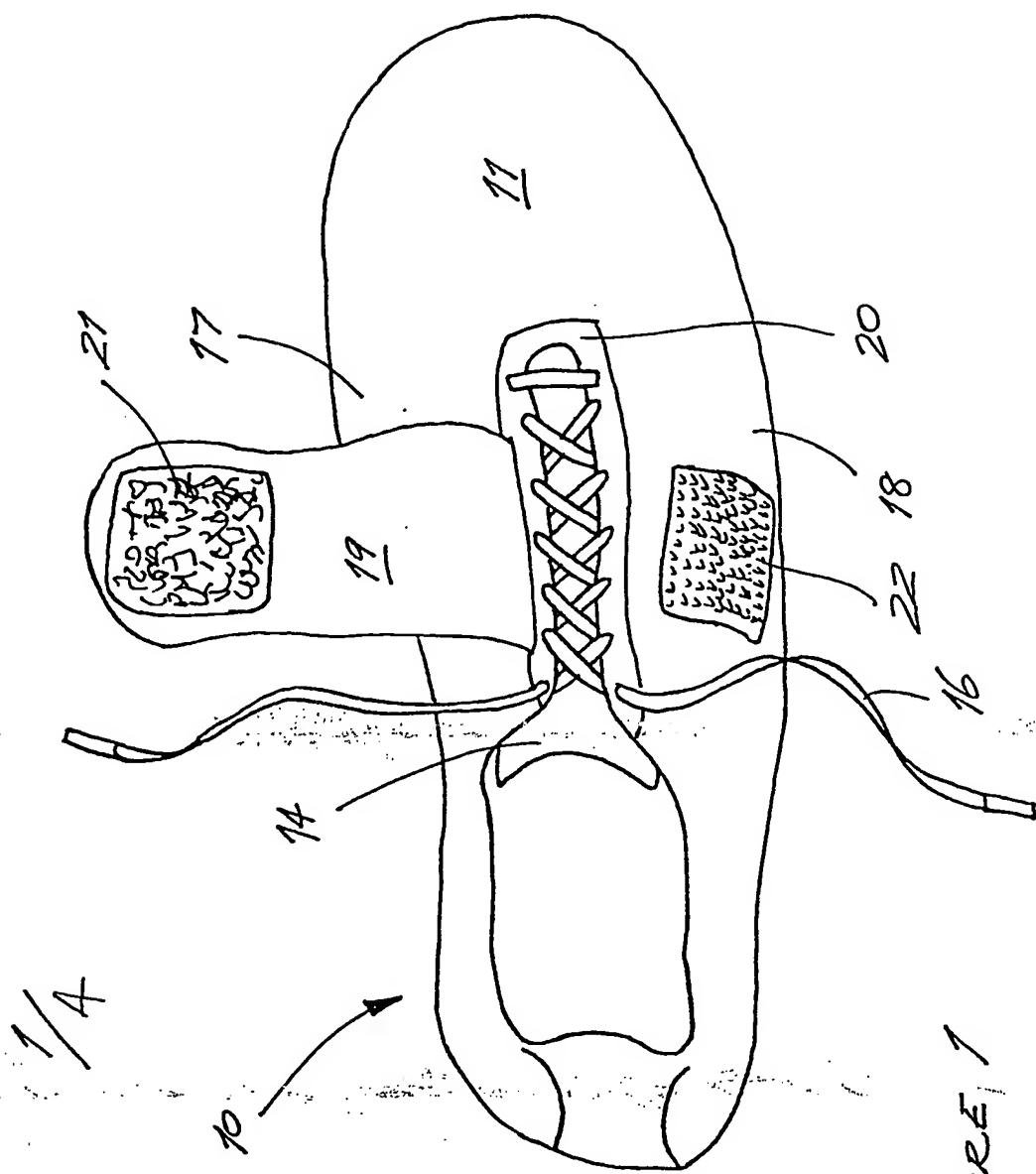


Figure 1

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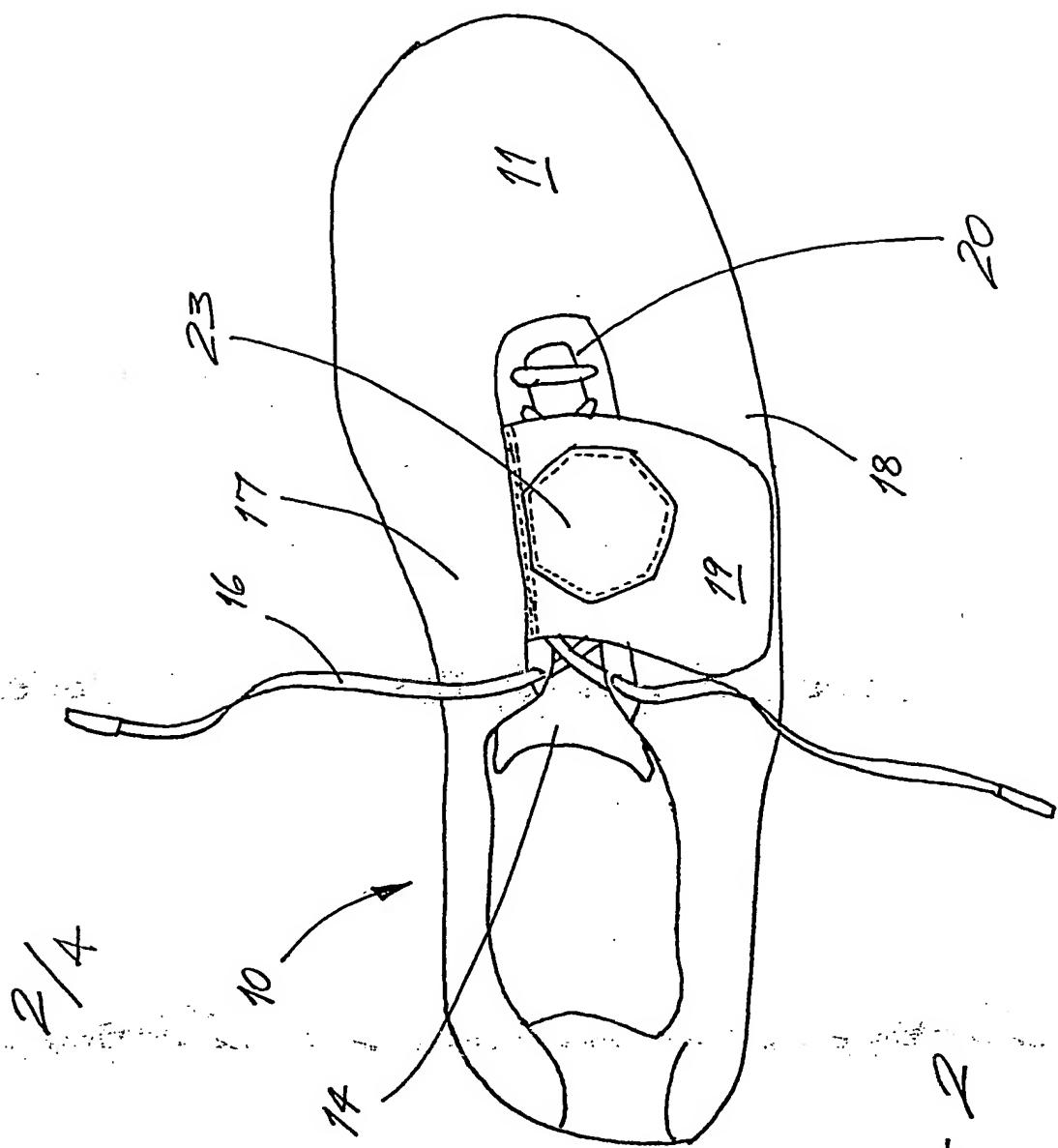


Figure 2

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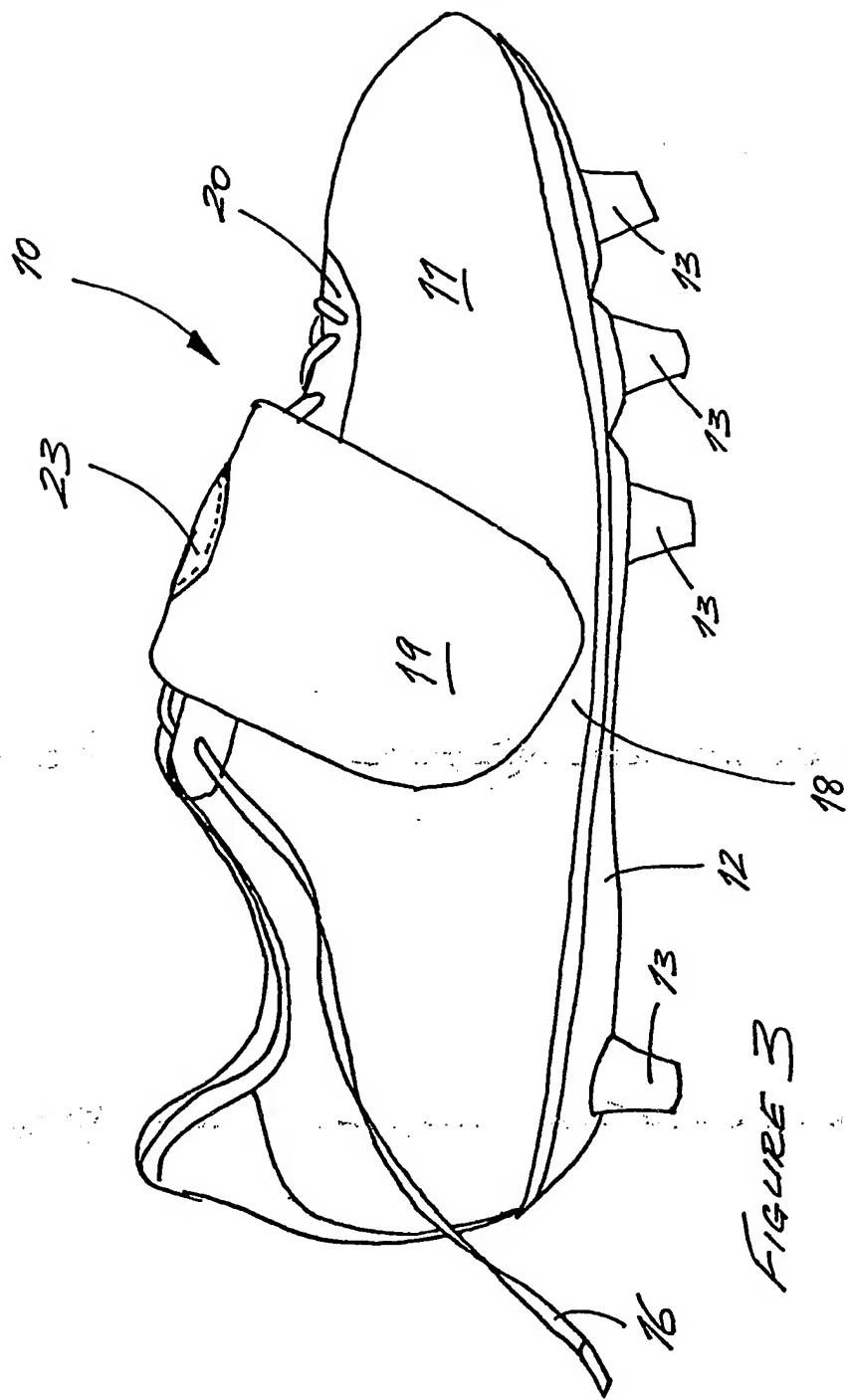


Figure 3

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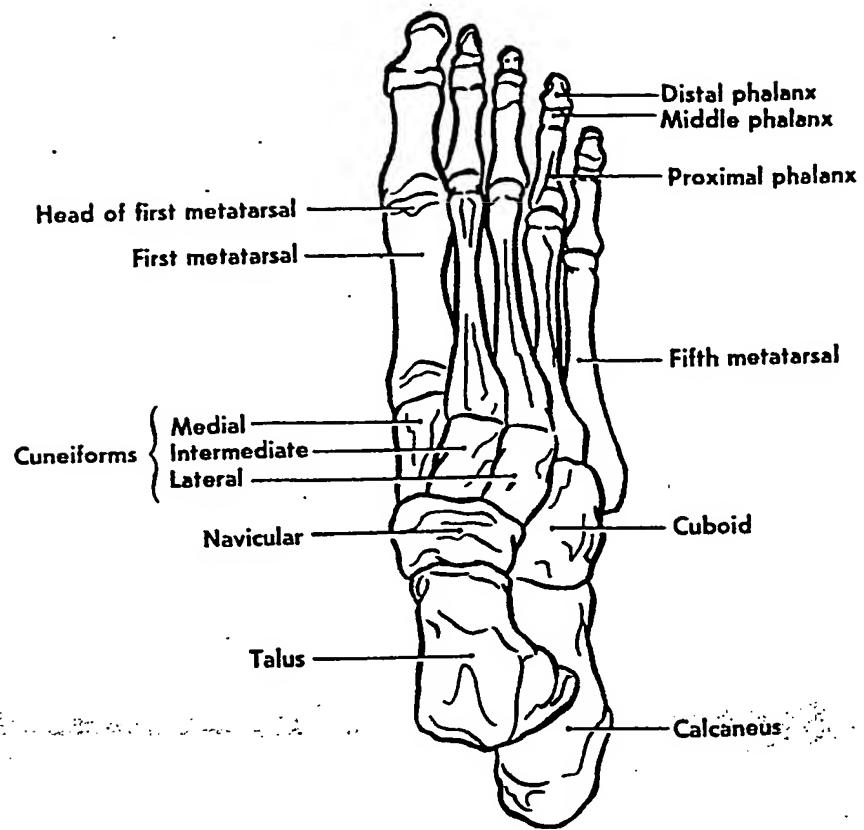


FIGURE 4

- | -

### A SHOE OR BOOT

This invention relates to a shoe or boot for use in a ball kicking game. By "ball kicking game" is meant a game in which the kicking of a ball is permitted, and the term includes the following games: Association Football, Australian Rules Football, Gaelic Football, Gridiron Football ("American Football") and Rugby Football (playable according to Union and League laws).

It is frequently required in ball kicking games for a player to exercise skill in the kicking of a ball, either directly to score points or to gain a territorial or other advantage.

Coaching manuals have been written to assist players to learn or improve upon the techniques employed for the kicking of a ball, but such manuals are not always adequate in their instruction concerning the optimum manner of striking a ball.

According to a first aspect of the invention, there is provided a shoe or boot for use in a ball kicking game including a flap securable across the upper of the shoe or boot and having secured thereto a patch of a material which patch, on securing of the flap, is located in the optimum position of contact of the shoe or boot with a ball for kicking.

This arrangement has numerous advantages in the teaching and practice of ball kicking.

The provision of a patch corresponding to the optimum position of contact enables a player to feel precisely when he has made an optimum contact with a ball, and he is therefore able to practise ball kicking with a view to reproducing the feeling of optimum contact and thereby improve his skill in, and the consistency of, his kicking.

It has been found that the teaching in particular of correct ball kicking can be highly successful using the shoe or boot of the invention.

This is because there is a tendency for the player to improve the accuracy of his kicking at the same time as learning, through use of the invention, the "feel" of the kick when executed correctly. These two aspects of kicking the ball help to improve the player's confidence, and this is especially important in the coaching of young players or older

players who find that they are unable to improve their kicking.

The provision of a flap securable across the upper of the shoe or boot enables the shoe or boot to have an otherwise conventional configuration, including a longitudinal slit to either side of which are disposed lace eyelets, in which laces can be inserted to tighten the shoe or boot. Thus, the shoe or boot of the invention can be readily and easily adapted from an existing shoe or boot, with the result that manufacture of a shoe or boot according to the invention is cheap to undertake, because it does not require more than a minor modification of existing machinery. Furthermore, the shoe or boot, can, prior to use, be put on and tightened in a manner familiar to the player, with securing of the flap taking place as a subsequent step.

In a preferred embodiment of the invention, the flap is sufficiently large and is so positioned when secured as to cover a substantial part of the laces of the shoe or boot, and this advantageously reduces the risk of causing lace burns and cuts in other players during, for example, a game of football.

In the game of Association Football, it has been observed that coaching manuals for this game almost invariably teach that skilled kicking should be carried out by striking a ball with the instep of the foot. Such coaching manuals advise a player to adopt a balanced position in the approach to and follow through after kicking of a ball.

However, experience shows that it is not easy to consistently strike a ball properly with part of the instep of one or other foot.

The action of a foot can be divided into three broad categories, those of base, lever and shock absorption; standing; and walking. Each of these is discussed briefly below in order to assist in understanding the invention.

#### Base, lever and shock absorption

The functions of the foot are to act as a stable base for the

superimposed body weight in standing and as a rigid lever in locomotion. It also has to be sufficiently flexible to provide shock absorption and adapt itself to different attitudes in different activities. Such difference may be exemplified by contrasting the acts of walking or standing on a level surface with those of cross-country running over rough terrain or rock-climbing. The capacity of the foot to meet such conflicting demands is determined by the shape and arrangement of bones and joints and the control of movement by the ligaments and muscles.

### Standing

In standing the foot acts as a base, the necessary stability being afforded by the interlocking of the joints under the influence of compression from the opposing forces of body weight from above and the equal and opposite ground reaction forces from beneath. Morton (1935) designated this 'structural stability' which he defined as 'that arrangement of bones and ligaments which makes the foot a rigid base with a margin of secure support in all directions'. From the stable base provided by the two feet, the body is held erect and balanced by the postural tone of muscles with the centre of gravity within the confines of the base ('postural stability').

The body weight is distributed to the hindfoot and forefoot through the arched formation of the tarsal and metatarsal bones.

### Walking

In walking the foot becomes a lever of the second order serving to propel the body forward over the fulcrum provided by the fixed metatarsal heads and toes. The walking cycle is the interval between successive heel contacts for the same foot, and for each limb it is divided into a stance phase (60%) and a swing phase (40%).

During the stance the foot is stationary on the ground supporting

the body as it moves forward over the foot. The first foot makes contact with the ground at heel strike and stops swinging forward. Then it quickly becomes loaded just before mid-stance as the metatarsal heads make contact with the ground and become weightbearing. At this moment the opposite foot leaves the ground. Shock absorption at this stage is provided by muscles lengthening under tension and controlling yielding movements at the knee, ankle and tarsal joints. As the body swings further forward the heel leaves the ground and the entire thrust of weight and momentum is concentrated on the metatarsal heads and the distal pads of the toes. This area of contact provides the fulcrum for the propulsive effort of muscles at toe-off. The foot then leaves the ground and the swing phase begins as the opposite foot enters the stance phase. During the swing phase the foot is clear of the ground as the limb swings past its neighbour preparing to resume weightbearing at heel strike and so the walking cycle is repeated.

As the hallux (big toe) bears weight, its interphalangeal joint is held stiff while the metatarsalphalangeal joint dorsiflexes (bends upwards) as the heel rises. The hallux thus becomes a rigid weightbearing structure and provides the major part of the base from which comes the final impetus at toe-off.

The inventor has discovered, by observation and careful analysis of the requirements for accurate kicking of a football in conjunction with an appreciation of the foot action as described above, that a particular region of the instep is the optimum point of contact of the foot with the ball.

It has been found that a shoe or boot according to the invention tends to cause a wearer on kicking of a ball to adopt a balanced posture throughout the kicking movement. As a result, the coaching of this game is made considerably easier because time and effort need not be devoted to the adoption of a particular posture, and the player can concentrate on considerations such as strength and direction, and optionally, imparting of

spin to cause swerving.

Accordingly, in a shoe or boot according to the invention in the playing of football, the patch is shaped and disposed to substantially overlie the medial and intermediate cuneiforms region of the foot when the flap is secured across the upper of the shoe or boot.

It is therefore preferable that the flap is positioned for securing across the instep of a wearer of the shoe or boot.

Conveniently, the flap is secured at one end in a region extending along one side of the shoe or boot, is hingeable so the patch on the flap overlies the instep and is fastenable using any suitable known fastening means to a region on the opposite side of the boot. Preferably the flap is releasably securable across the upper.

This advantageously means that the flap is permanently attached to the shoe or boot and is therefore always in position during play but when not in use (during putting on or taking off of the shoe or boot) does not interfere with the lacing of a shoe or boot.

It will be understood that the flap referred to herein is additional to the conventional boot or shoe tongue which is disposed beneath the lacing.

Preferably the fastening means includes a "Velcro" (Registered Trade Mark) fastener arranged to secure the free end of the flap to the shoe or boot.

A "Velcro" (Registered Trade Mark) fastener has particular advantages when used in a sports shoe or boot because there frequently is little time for adjusting footwear during the course of a game, and a "Velcro" (Registered Trade Mark) fastening can be rapidly secured and released, whilst allowing for some adjustment of the fastening of the flap and hence the position of the patch. However, other forms of releasable fastening are possible.

Preferably the flap is formed of a flexible, resilient material. This advantageously allows the flap to flex during normal use of the boot.

The flap may preferably be leather, rubber, imitation leather or a combination of two or more such materials. These materials have been found to be particularly suitable.

Preferably the patch is formed of the same material as the flap. Alternatively, the patch may be formed of a material different from the flap.

The choice of material for the patch is determined by considerations both of the cost of the shoe or boot and also the kind of feeling which it is intended to impart to a wearer of the shoe or boot to indicate correct and incorrect striking of a ball.

It is preferable for the patch to be coloured differently from the flap.

This feature is particularly advantageous when the shoe or boot of the invention is used for training and/or teaching purposes, because the patch can be easily pointed out to a wearer of the shoe or boot.

It is further preferable that the shoe or boot is adapted for use in the game of Association Football.

For example, the shoe or boot can be fitted with studs, and can be manufactured in a form suitable for playing Association Football. It is envisaged that, although the shoe or boot of the invention will be of considerable utility in Australian Rules Football, Gaelic Football, Gridiron Football and Rugby Football, it is likely to be of the greatest utility in the game of Association Football.

According to a second aspect of the invention, there is provided a pair of shoes or boots each according to the invention as hereinbefore described.

According to a third aspect of the invention, there is provided a shoe or boot for use in a ball kicking game including a visually distinctive portion corresponding to an optimal position of contact of the shoe or boot with a ball for kicking.

This simple form of the invention would dispense with the outer

flap and the patch thereon, and is useful for demonstration purposes, because it is easily possible to show a wearer of the shoe or boot where correctly to strike the ball.

There now follows a description of a preferred embodiment of the invention, by way of example, with reference being made to the accompanying drawings in which:

Figure 1 is a plan view of a football boot in accordance with the invention, including a flap shown in a partly-secured configuration;

Figure 2 is a plan view of the boot of Figure 1, in which the flap is fully secured across the upper;

Figure 3 is a side elevational view of the boot as shown in Figure 2; and

Figure 4 is a schematic representation of the bones of a human right foot.

Referring to the drawings, there is shown a football boot indicated generally at 10, constructed for the most part in a conventional manner. The boot therefore includes an upper 11, a sole 12, studs 13 and a conventional internal tongue 14 all configured in the manner commonly employed in a football boot.

In the drawings, the part of upper 11 disposed on the instep side of the boot is designated by reference numeral 17, and the part of upper 11 disposed on the opposite (outer) side of the boot is designated by reference numerals 18.

The boot includes a lace 16 threaded through eyelets formed to either side of a slot extending longitudinally, for tightening the boot onto a foot, again in a conventional manner.

A reinforcing band 20 is secured about the periphery of the longitudinal slot, and the eyelets are formed in the reinforcing band and the material of the boot below the reinforcing band 20.

A flap, in the form of a further tongue 19, is secured at one end to the boot 10, along a portion of the edge of reinforcing band 20 extending

along the side 17 of upper 11. In use the tongue extends across the instep.

In the embodiment shown in Figure 2, tongue 19 is secured by a double row of stitching passing through the end of tongue 19 and reinforcing band 20.

Tongue 19 is therefore hingeable about its end attached at the edge of reinforcing band 20, between a position as shown in Figure 1 (which shows the boot 10 when not in use) and a position as shown in Figures 2 and 3, in which the boot is ready for use.

To the underside of tongue 19 is secured a region consisting of one part 21 of a Velcro fastener, the other part 22 of which is firmly secured to upper 18 at a region part way between reinforcing band 20 and sole 12 on the outside 18 on upper 11.

When tongue 19 is hinged to its position as shown in Figures 2 and 3, it can thus be secured in this position.

Tongue 19 is made of a flexible, resilient material, such as leather, imitation leather, rubber or a combination of such materials, and therefore the exact positioning of tongue 19 on fastening of the Velcro fastener 21, 22 can be adjusted if necessary.

On the upper face of tongue 19 is secured a patch 23, which may be of the same material as tongue 19 or of a different material, and is preferably coloured differently from the material of tongue 19.

Patch 23 is so disposed on tongue 19 that when the free end of tongue 19 is secured by means of Velcro fastener 21, 22, patch 23 overlies the part of the foot which is the optimum part for striking a football to produce consistent, accurate kicking.

In the illustrated embodiment, the patch 23 is equidistant from the two edges of a generally parallel-sided tongue 19, although other positions of the tongue relative to the patch are possible. The size and shape of the patch is chosen, for example according to the age of the wearer of the boot, his level of skill in ball kicking, and the shape of the ball. The patch will usually be circular or near-circular (e.g. a septagon)

and, for adults, have a diameter of about 25-31 mms, and preferably about 27 to 29 mms. It is not expected that sizes of the patch smaller than approximately that of a U.K 50 pence will be used normally, although there may be occasions when such a patch size is required.

In the case of football, the optimum part of the foot for the location of the patch has been found to be the region (best seen in Figure 4) formed by the abutment of the first metatarsal bone 24 and the medial cuneiform bone 25.

It has been found that the striking of a football using this region of the foot tends to cause a footballer to adopt a good, balanced posture and the chances of him accurately striking the ball are thereby enhanced.

The patch 23 enables a wearer of the boot 10 to feel when he has correctly struck the ball.

If the patch 23 is made a different colour from tongue 19 the wearer of boot 10 is given psychological assistance by being able to see which part of the boot should strike the ball. This feature is particularly useful when the boot 10 is used to train young footballers.

**The boot of the invention is put on the foot as follows:**

Prior to putting on the boot, the free end of tongue 19 (if not already released) is released at the Velcro fastening 21, 22 to give access to the lace 16.

The boot is put onto the foot in a normal manner, and the ends of lace 16 are tied. The free end of tongue 19 is then secured to the boot by means of the Velcro fastening 21, 22, and if necessary minor adjustment of the position of patch 23 is accomplished by altering the precise area of engagement of the two Velcro parts 21, 22.

It will be appreciated that both boots of a pair will be made according to the invention to improve the kicking from either foot. The arrangements of tongues 19 in a pair of boots will usually be a mirror image arrangement, in which the respective tongues 19 are secured on the outsides of the reinforcing bands 20. Alternatively, the tongue 19 of each

boot of the pair can be secured to the reinforcing band on the right hand side of the upper and extending towards the left hand side. In this arrangement the positioning of the patch relative to the tongue will differ between the left and right boots. Each of these patches over the medial and intermediate cuneiforms region, as previously indicated.

CLAIMS

1. A shoe or boot for use in a ball kicking game, including a flap securable across the upper of the shoe or boot and having secured thereto a patch of material which patch, on securing of the flap, corresponds to the optimum position of contact of the shoe or boot with a ball for kicking.

2. A shoe or boot according to Claim 1 wherein the flap is securable across the upper forwardly of the ankle of a wearer of the shoe or boot.

3. A shoe or boot according to Claim 2 wherein the flap is secured at one end in a region extending along one side of the shoe or boot, is hingeable to overlie the top of the boot and is fastenable using fastening means in a region on the opposite side of the boot.

4. A shoe or boot according to any preceding claim wherein the flap is releasably securable across the upper.

5. A shoe or boot according to Claim 4 wherein the fastening means includes a "Velcro" (Registered Trade Mark) fastener arranged to secure the free end of the flap to the shoe or boot.

6. A shoe or boot according to any preceding claim wherein the flap is formed of a flexible, resilient material.

7. A shoe or boot according to Claim 6 wherein the material is leather, rubber, imitation leather or a combination of two or more such materials.

8. A shoe or boot according to any preceding claim wherein the patch is formed of the same material as the flap.

9. A shoe or boot according to any of Claims 1 to 6 wherein the patch is formed of a different material from the flap.

10. A shoe or boot according to any preceding claim wherein the patch is coloured differently from the flap.

11. A shoe or boot according to any preceding claim adapted for use in the game of Association Football.

12. A pair of shoes or boots each according to any preceding claim.

13. A shoe or boot for use in a ball kicking game including a visually distinctive portion corresponding to the optimum position of contact of the shoe or boot with a ball for kicking.

14. A shoe or boot or a pair of shoes or boots substantially as herein described, with reference to or as illustrated in the accompanying drawings.

15. Any novel combination or sub-combination disclosed and/or illustrated herein.

AMENDMENTS TO THE CLAIMS HAVE BEEN FILED AS FOLLOWS

1. A shoe or boot for use in a ball kicking game, including a flap securable across the upper of the shoe or boot and having secured thereto a patch of material which patch, on securing of the flap, overlies a portion of the shoe or boot corresponding to the position of the medial and intermediate cuneiform bones of the foot of a wearer of the shoe or boot.
2. A shoe or boot according to Claim 1 wherein the flap is securable across the upper forwardly of the ankle of a wearer of the shoe or boot.
3. A shoe or boot according to Claim 2 wherein the flap is secured at one end in a region extending along one side of the shoe or boot, is hingeable to overlie the top of the boot and is fastenable using fastening means in a region on the opposite side of the boot.
4. A shoe or boot according to any preceding claim wherein the flap is releasably securable across the upper.
5. A shoe or boot according to Claim 4 wherein the fastening means includes a "Velcro" (Registered Trade Mark) fastener arranged to secure the free end of the flap to the shoe or boot.
6. A shoe or boot according to any preceding claim wherein the flap is formed of a flexible, resilient material.
7. A shoe or boot according to Claim 6 wherein the material is leather, rubber, imitation leather or a combination of two or more such materials.
8. A shoe or boot according to any preceding claim wherein the patch is formed of the same material as the flap.

9. A shoe or boot according to any of Claims 1 to 6 wherein the patch is formed of a different material from the flap.

10. A shoe or boot according to any preceding claim wherein the patch is coloured differently from the flap.

11. A shoe or boot according to any preceding claim adapted for use in the game of Association Football.

12. A pair of shoes or boots each according to any preceding claim.

13. A shoe or boot or a pair of shoes or boots substantially as herein described, with reference to or as illustrated in the accompanying drawings.

14. Any novel combination or sub-combination disclosed and/or illustrated herein.

Patents Act 1977  
Examiner's report to the Comptroller under  
Section 17 (The Search Report)

Application number

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Relevant Technical fields	Search Examiner
(i) UK CI (Edition K ) A3B	J GRAHAM
(ii) Int CI (Edition 5 ) A43B	
Databases (see over)	Date of Search
(i) UK Patent Office	12.9.91
(ii)	

Documents considered relevant following a search in respect of claims 1-12

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
Y	GB 1293925 (GATH) see shield 14	1, 2, 3, 4, 6, 7, 11
X	GB 1225359 (CO-OP) see apron 15 and page 2 lines 5-7	1, 2, 3, 4, 7, 11
Y	GB 940925 (BRUTTING) see eg toe-cap 1	1, 11
X	GB 541229 (SHILLCOCH) see strap 5 and page 2 lines 50 on	1, 2, 4, 6, 7, 9, 11
X	GB 409010 (SUNDERLAND) see sheath a	1, 2, 4, 6, 7, 8, 11
Y	GB 202859 (TARRY) see eg ribs d	1, 11
Y	EP 102842 (INV. TECH. CORP) see flap 18	1, 2, 10, 11
Y	EP 058953 (ADIDAS) see strip 10	1, 2, 3, 4, 5, 6, 7
Y	US 4204346 (FUGERE)	1, 10, 11

Category	Identity of document and relevant passages	Relevance to claim(s)

#### Categories of documents

X: Document indicating lack of novelty or of inventive step.

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A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

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